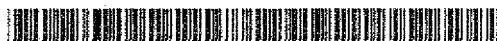


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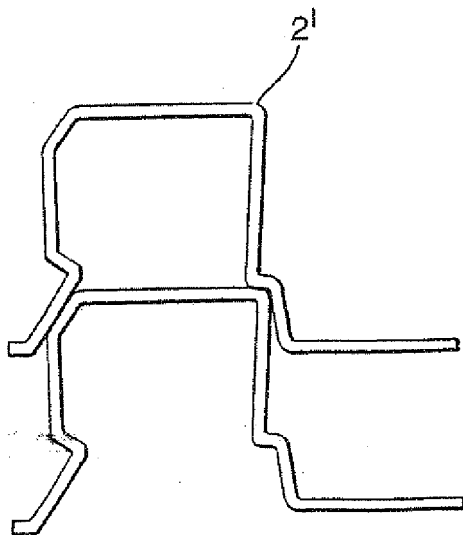
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(54) Title: **CONTAINER LID**



(57) Abstract: Thermoformed plastic container lid comprising a substantially sheet like lid body having a depending skirt (1) extending around the full periphery of the lid body, the skirt (1) being suitable for engagement with the peripheral portion of a plastic open top container, comprising a lid rim (2) in a position near the periphery of the lid body, which divides the lid body in a centrally located mirror (3) and an outer part (4) on the other side of the lid rim (2), wherein the lid rim (2) comprises one or more bridges (5) connecting the mirror (3) and the outer part (4).

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## Container lid

### Description

#### 5 Field of the invention

The invention relates to a thermoformed plastic container lid comprising a substantially sheet like lid body having a depending skirt (1) extending around the full periphery of the lid body, the skirt (1) being suitable for engagement with the peripheral portion of a plastic open top container, comprising a lid rim (2) in a position near the periphery of the lid body, which divides the lid body in a centrally located mirror (3) and an outer part (4) on the other side of the lid rim (2). Such a container lid is also known as a two-step container lid (see figure 1), as opposed to a one-step container lid (see figure 2), in which the rim (2') engages with the container rim.

20

#### Background to the invention

A two-step container lid as described in the preamble of claim 1 is known from DE29910076U1. A two-step container lid may be used in situations where the container is covered with a cover foil, whereas the one-step lid may not. The reason is that the mirror of the two-step lid is at the same level as the top rim of the container and the foil. A one-step container lid cannot be used in combination with a foil at the level of the container rim, since the mirror of the one-step lid will be at a level below the level of the foil.

30

problem is also solved by the provision of bridges (5).  
The tendency to nest is herein determined by measuring  
the pressure needed to compress a stack of lids, and the  
pressure needed is herein called the stack compression  
5 resistance (expressed in N/m<sup>2</sup>).

#### Detailed description of the invention

The container and lid according to the invention may be  
10 made by the technologies known in the art, from  
materials known in the art.

The lid is made by thermoforming. In thermoforming a  
plastic sheet softened by heat is formed either into or  
15 around a mould. This forming step may be supported by  
vacuum, air pressure, and material distribution may be  
improved by plug assistance. There are three main groups  
of thermoforming: vacuum forming, pressure forming and  
matched mould forming.

20 The material of the lid and container may be any  
material known for this use. Examples of possible  
materials are HDPE (high density polyethylene), LDPE  
(Low density polyethylene), PP (polypropylene),  
25 PET (Polyester Terephthalate), PVC (Polyvinylchloride),  
OPVC (oriented PVC), PC (Polycarbonate), EVOH  
(Ethylenevinylalcohol) and multilayer materials of two  
or more of these polymers.

30 The shape of the container lid may be any shape, for  
example round, rounded rectangular, oval or square.

The number of bridges may be easily determined by the skilled person taking into consideration the size and shape of the container lid. A large container lid will need more bridges than a small container lid.

5

In another preferred embodiment the container lid comprises an uneven number of bridges (5) evenly distributed around the periphery of the lid. This improves the flexing strength of the lid, compared to  
10 the same lid with an even number of bridges distributed evenly around the periphery of the lid. Preferably the width of the bridges (5) is 3 mm or more. The width should be such that the bridge does not break when a pressure commonly used to close the container is  
15 applied. The features of the preferred embodiments described above may be applied as such or in combination with each other.

The lid and container may be used for packaging consumer  
20 goods, such as for instance foods, such as for instance margarines or spreads.

#### Description of the drawings

25

- Figure 1: Cross-section of detail of two stacked one-step container lids
- Figure 2: Cross-section of detail of two stacked two-step container lids
- 30 Figure 3: Top view of container lid according to the invention having eight bridges

## Claims

1. Thermoformed plastic container lid comprising a substantially sheet like lid body having a depending skirt (1) extending around the full periphery of the lid body, the skirt (1) being suitable for engagement with the peripheral portion of a plastic open top container, comprising a lid rim (2) in a position near the periphery of the lid body, which divides the lid body in a centrally located mirror (3) and an outer part (4) on the other side of the lid rim (2), characterised in that the lid rim (2) comprises one or more bridges (5) connecting the mirror (3) and the outer part (4).
2. Container lid according to claim 1, wherein the one or more bridges (5) are in the same plane as the mirror (3).
3. Container lid according to claim 1 or 2, wherein the bridge is a partial bridge consisting of two bridge parts (9,10), each being an indentation of a side wall of the lid rim (2).
4. Container lid according to claim 3, wherein the indentation is formed by placing part of the side wall at a negative angle, compared to the side wall at a place where there is no bridge.
5. Container lid according any of claims 1-4, comprising four or more bridges (5).

1/2

Fig.1.

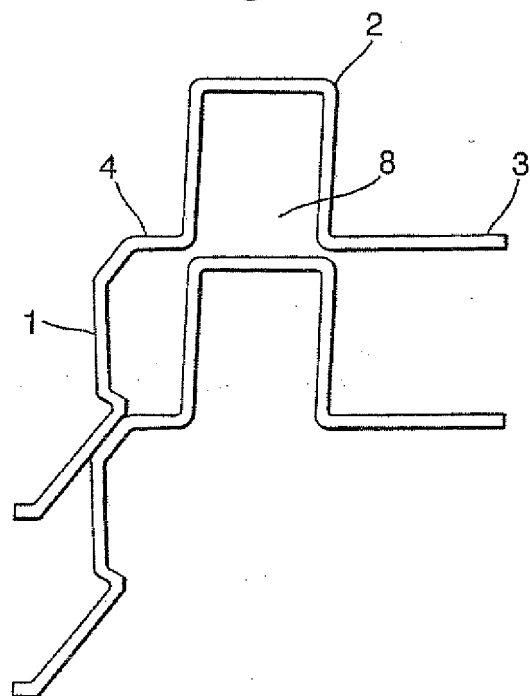
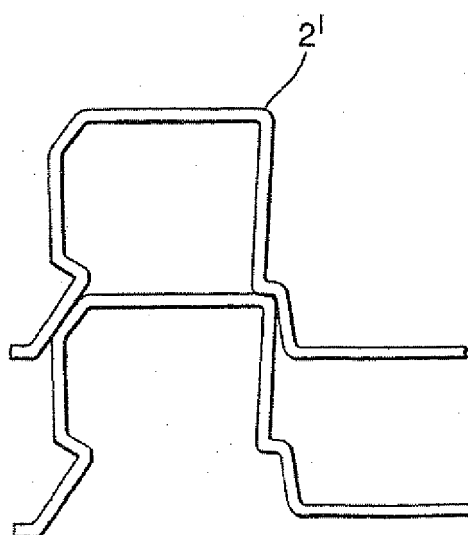


Fig.2.



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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A  A  A	US 3 883 036 A (HAVEN HERM L ET AL) 13 May 1975 (1975-05-13) column 2, line 23 - line 35; figures 1,2  column 3, line 62 - line 64  US 5 012 928 A (RICHARDSON DALE S ET AL) 7 May 1991 (1991-05-07) column 3, line 64 - column 4, line 30; figures 1,5,6  WO 02/098759 A (PROCTER & GAMBLE) 12 December 2002 (2002-12-12) page 22, line 5 - line 13; figure 10  -/-	1,2,5,8  3,4,6,7, 9
<input checked="" type="checkbox"/> Further documents are listed in the continuation of box C. <input checked="" type="checkbox"/> Patent family members are listed in annex.		
* Special categories of cited documents : *A* document defining the general state of the art which is not considered to be of particular relevance *E* earlier document but published on or after the international filing date *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) *O* document referring to an oral disclosure, use, exhibition or other means *P* document published prior to the international filing date but later than the priority date claimed *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. *Z* document member of the same patent family		
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Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel (+31-70) 340-2040, Tx 31 851 epo nl, Fax (+31-70) 340-3016		Authorized officer Mans-Kamerbeek, M

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